Pushing the Envelope			
2007 Science and Technology			
Learning Results: Parameters for Essential Instruction			
Maine Science and Technology			
Grades 3-5			
Activity/Lesson	**State**	**Standards**	
Types of Engines (pgs. 11-23)	ME	SCT.3-5.D4.b	Students summarize how various forces affect the motion of objects. Describe how fast things move by how long it takes them to go a certain distance.
Physics and Math (pgs. 43-63)	ME	SCT.3-5.D4.a	Students summarize how various forces affect the motion of objects. Predict the effect of a given force on the motion of an object.
Rocket Activity (pgs. 69-75)	ME	SCT.3-5.D4.a	Students summarize how various forces affect the motion of objects. Predict the effect of a given force on the motion of an object.
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Grades 6-8			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	ME	SCT.6-8.C4.b	Students describe historical examples that illustrate how science advances knowledge through the scientists involved and through the ways scientists think about their work and the work of others. Describe a breakthrough from the history of science that contributes to our current understanding of science.
Types of Engines (pgs. 11-23)	ME	SCT.6-8.D4.e	Students describe the force of gravity, the motion of objects, the properties of waves, and the wavelike property of energy in light waves. Describe and apply an understanding of the effects of multiple forces on an object, and how unbalanced forces will cause changes in the speed or direction.
Chemistry (pgs. 25-41)	ME	SCT.6-8.A2.a	Students use models to examine a variety of real-world phenomena from the physical setting, the living environment, and the technological world and compare advantages and disadvantages of various models. Compare different types of models that can be used to represent the same thing (including models of chemical reactions, motion, or cells) in order to match the purpose and complexity of a model to its use.

Physics and Math (pgs. 43-63)	ME	SCT.6-8.D4.e	Students describe the force of gravity, the motion of objects, the properties of waves, and the wavelike property of energy in light waves. Describe and apply an understanding of the effects of multiple forces on an object, and how unbalanced forces will cause changes in the speed or direction.
Rocket Activity (pgs. 69-75)	ME	SCT.6-8.D4.e	Students describe the force of gravity, the motion of objects, the properties of waves, and the wavelike property of energy in light waves. Describe and apply an understanding of the effects of multiple forces on an object, and how unbalanced forces will cause changes in the speed or direction.
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Learning Results: Parameters for Essential Instruction			
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Grades 9-12			
Activity/Lesson	**State**	**Standards**	
History of Aviation Propulsion (pgs. 5-9)	ME	SCT.9-12.C4.b	Students describe the human dimensions and traditions of science, the nature of scientific knowledge, and historical episodes in science that impacted science and society. Select and describe one of the major episodes in the history of science including how the scientific knowledge changed over time and any important effects on science and society.
Chemistry (pgs. 25-41)	ME	SCT.9-12.D3.b	Students describe the structure, behavior, and interactions of matter at the atomic level and the relationship between matter and energy. Describe how the number and arrangement of atoms in a molecule determine a molecule's properties, including the types of bonds it makes with other molecules and its mass, and apply this to predictions about chemical reactions.
Physics and Math (pgs. 43-63)	ME	SCT.9-12.D4.a	Students understand that the laws of force and motion are the same across the universe. Describe the contribution of Newton to our understanding of force and motion, and give examples of and apply Newton's three laws of motion and his theory of gravitation.
Rocket Activity (pgs. 69-75)	ME	SCT.9-12.D4.a	Students understand that the laws of force and motion are the same across the universe. Describe the contribution of Newton to our understanding of force and motion, and give examples of and apply Newton's three laws of motion and his theory of gravitation.